

REMARKS

This application has been reviewed in light of the erroneous Office Action dated October 7, 2003, Applicant's "Request for Withdrawal of Office Action Dated October 7, 2003 and For Issuance of a New Office Action" submitted to the Office on December 19, 2003, and telephone interviews conducted on January 6, 2004 by one of Applicant's attorneys with Examiner Nolan and separately with Supervising Patent Examiner Hirshfeld. Examiner Nolan informed Applicant's attorney during the telephone interview that he would not be able to withdraw the Office Action dated October 7, 2003 and issue a new Office Action by today's date, i.e., the due date for responding to the outstanding October 7, 2003 Office Action. In an effort to advance prosecution on the merits in this application, Applicant has therefore decided to submit this Amendment and request favorable reconsideration.

Claims 1-25 are pending in this application. Claims 1, 8, 13, 20, and 25 have been amended to define still more clearly what Applicant regards as his invention. Claims 1, 4, 8, 10, 13, 16, 20, 22, and 25 are in independent form.

First, Applicant acknowledges the indication that Claims 2, 3, 5, 9, 11, 12, 14, 15, 17, 21, 23, and 24 include allowable subject matter and would be allowable if rewritten in proper independent form. These claims have not been so rewritten because, for the reasons given in Applicant's amendment dated May 16, 2002, and as provided below, their base claims are believed to be allowable.

The Office Action again objected to the specification as to certain informalities such as misspelled words and grammatical errors, and, again, Applicant notes that these objections were overcome in Applicant's response to the same objection in the January 16, 2002 Office Action. In that response an entire Substitute Specification was submitted to the Office, making the changes requested in the Office Action and additional

changes as well. None of these reasons, however, were addressed by the Patent Office.

For the Examiner's convenience, Applicant encloses again copies of the substitute specification (clean version and marked-up version) and submits that no new matter was added in the substitute specification. Applicant's respectfully request withdrawal of this objection.

The Office Action again objected to Claims 1-3, 8, 9, 13-15, 20, 21, and 25, stating that the recitation "substantially equal" does not describe the invention in such a way that particularly points out and distinctly claims the instant invention. This objection was responded to in the Amendment dated May 16, 2002, but the response was not considered by the Patent Office. However, without agreeing to the propriety of this objection, Applicant has deleted the word "substantially" from Claims 1, 8, 13, 20, and 25, and therefore respectfully request withdrawal of this objection.

The Office Action again rejected Claims 1, 4, 6-8, 10, 13, 16, 18-20, 22, and 25 under 35 U.S.C. § 102 (e) as being anticipated by U.S. Patent No. 6,076,911 (Watanabe). Applicant respectfully traverses this rejection. This rejection was also responded to in the Amendment dated May 16, 2002, but the response was not considered by the Patent Office. Applicant includes below the Remarks provided in the May 16, 2002 Response to overcome this rejection.

Applicant submits that independent Claims 1, 4, 8, 10, 13, 16, 20, 22, and 25, together with the remaining claims dependent thereon, are patentably distinct from Watanabe at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is a printing apparatus that scans a print head over a printing medium a plurality of times, performs printing on the print medium during each scan, and feeds the print medium a predetermined amount in a direction that is different from a scanning direction of the

carriage. The print apparatus gets information relating to a printing medium feeding period, which is required for feeding the print medium the predetermined amount after completing the printing of the preceding line in a preceding scan. The print apparatus also sets a carriage scanning period, which is required to start the printing of the next line after completing the printing of the preceding line so as to become equal to the printing medium feeding period, depending upon a printing completion position of the preceding line and the printing start position of the next line. In addition, the print apparatus drives the carriage depending upon a period set by the carriage scanning period setting means.

Important features recited in Claim 1 include getting information relating to a printing medium feeding period, and setting the carriage scanning period so as to be equal to the printing medium feeding period, depending upon a printing completion position of the preceding line and the printing start position of the next line. Applicant notes that an end position of the recording operation of the prior line (see, e.g., Figure 3B, reference numeral 2) and the start position of the recording operation of the next line (see, e.g., Figure 3B, reference numeral 3) varies. Therefore, the carriage scanning period required between the end position of the recording operation of the prior line and the start position of the recording operation of the next line also varies.

An example of adjusting the carriage scanning period to become equal with the printing medium feeding period is provided in the substitute specification at pages 10 and 11, paragraph 0060. The example provides two scenarios. First, when the carriage scanning period is greater than the printing medium feeding period, there is no waiting period between scanning the first and second line. On the other hand, when the carriage scanning period is less than the printing medium feeding period, a waiting period is provided between scanning the first and second line. Thus, in either scenario, after the printing medium feeding period is completed, the printing for the second line begins.

Consequently, the time for printing an image is minimized because the carriage scanning period is equalized with the printing medium feeding period. (It is to be understood, of course, that the scope of Claim 1 is not limited to the details of this embodiment, which is referred to only for purposes of illustration.)

Watanabe relates to a recording apparatus and recording control method for effecting image recording on a recording medium. In Watanabe, a head carriage (see, e.g., FIG. 2, reference numeral 2020), upon completing a printing operation in the forward direction (see, e.g., FIG. 3, reference numeral (2)), gives a conveying apparatus (see, e.g., FIG. 1, reference numeral 3002) an instruction to start a conveying operation of a printing medium (see, e.g., the specification at col. 7, lines 8-35 and Fig. 3). The head carriage, after gradually decelerating, stops, and immediately thereafter, gradually accelerates to start the printing operation in the reverse direction (see, e.g., FIG. 3, reference numeral (3)). The head carriage also confirms a completion of the conveying operation of the printing medium by the predetermined amount (see, e.g., the specification at col. 7, lines 8-35, and FIG. 3). If the conveying operation of the predetermined amount of the printing medium has not been completed, an idle scanning is performed (see, e.g., the specification at col. 9, lines 21-43, and FIGs. 7 and 9).

The Office Action states that "Watanabe teaches printing . . . the functional 'wherein' clause recitation in column 7, lines 35-49." Applicant notes, however, that, in Watanabe, the starting point for conveying the print medium is based on an instruction that, at a certain *predetermined* time in the forward and reverse movement of the apparatus, is given to start the conveying operation of the recording medium, and, in response, a conveying apparatus moves the recording medium by a *predetermined* amount in the subscanning direction, corresponding to the recording scanning width of the recording head. Since the end position of the printing operation of the prior line and the start

position of the printing operation of the next line are *predetermined* and the printing medium conveying time is also *predetermined*, this does not teach or suggest either getting information relating to a printing medium feeding period or setting the carriage scanning period to be equal to the printing medium feeding period, as recited in Claim 1. In addition, in Watanabe, a sensor (see, e.g., FIG. 3, reference numeral 2020a) is provided for detecting that the head carriage is in a waiting period and other sensors (see, e.g., FIG. 3, reference numerals 2020b and 2020c) are provided for detecting whether the head carriage has reached a returning point. Even if these sensors detect the head carriage as described above, nothing in Watanabe, in describing these sensors, would teach or suggest either getting or sensing information relating to a printing medium feeding period or equalizing the carriage scanning period with the printing medium feeding period to minimize the time to print an image, as recited in Claim 1. Accordingly, for these reasons, Applicant submits that Claim 1 is patentable over Watanabe.

Independent Claims 4 and 16 include the same feature of getting information relating to a printing medium feeding period, as discussed above in connection with Claim 1. In addition, Applicant submits that Watanabe would not teach or suggest the feature of Claim 4 and 16 where printing of a line starts *without stopping* the carriage subsequent to the printing of the preceding line when the carriage scanning period is more than the printing medium feeding period and the directions of the preceding line and the next line are the same. Accordingly, at least for these reasons, Claims 4 and 16 are believed to be patentable over Watanabe.

Independent Claims 8, 10, 13, 20, 22, and 25 include the same feature of setting the carriage scanning period so as to be equal to the printing medium feeding period, as discussed above in connection with Claim 1. Accordingly, Claims 8, 10, 13, 20, 22, and 25 are believed to be patentable for at least the same reasons as discussed above in

connection with Claim 1.

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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